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Jellison, Jr.

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(54) **RULES BASED PLAYLIST GENERATION**

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G06F 7/00 (2006.01)
G06F 17/30 (2006.01)

(52) **U.S. Cl.**
CPC ***G06F 17/30053*** (2013.01); ***G06F 17/30038*** (2013.01); ***G06F 17/30743*** (2013.01)

(58) **Field of Classification Search**
CPC G06F 17/30743
USPC 707/916, 913, 912
See application file for complete search history.

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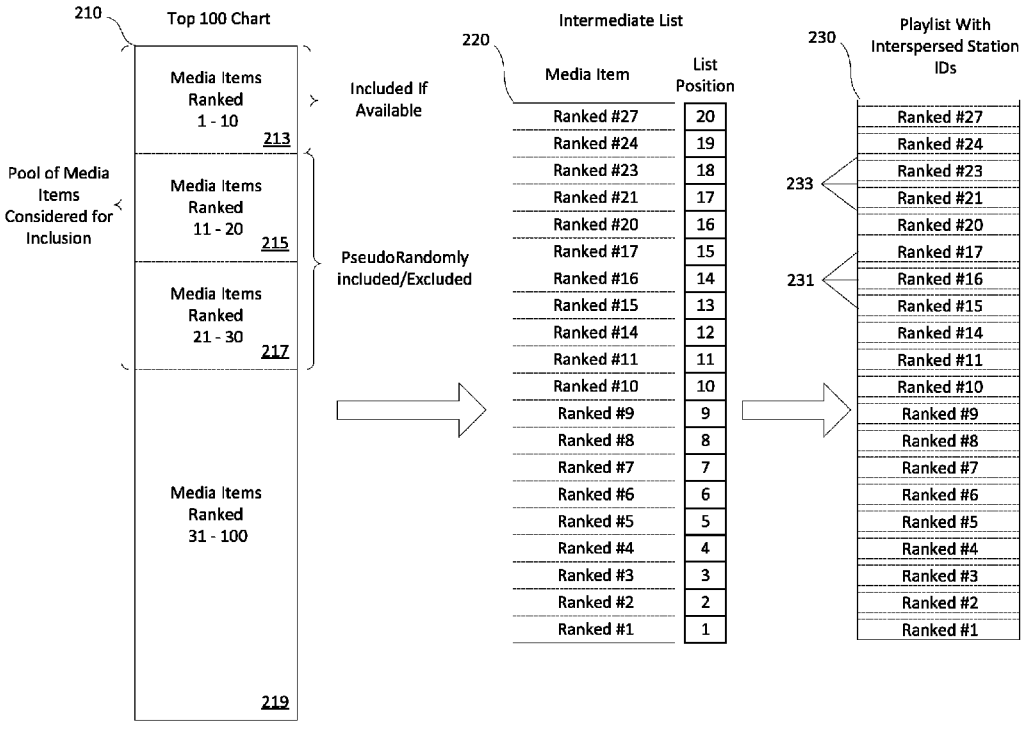
(57) **ABSTRACT**

A playlist can be generated based on a chart or list including ranked media items, e.g. songs, videos, etc., by automatically including the highest ranked media items to the playlist, but only adding some of the lower ranked media items to the playlist. A particular lower-ranked media item can be pseudo-randomly excluded from the playlist if that media item has a ranking in a current version of the chart that is lower than its ranking in a previous version. Once the desired number of media items has been added to an intermediate list, the intermediate list can be inverted, and station identifiers can be interspersed between the media items.

16 Claims, 4 Drawing Sheets



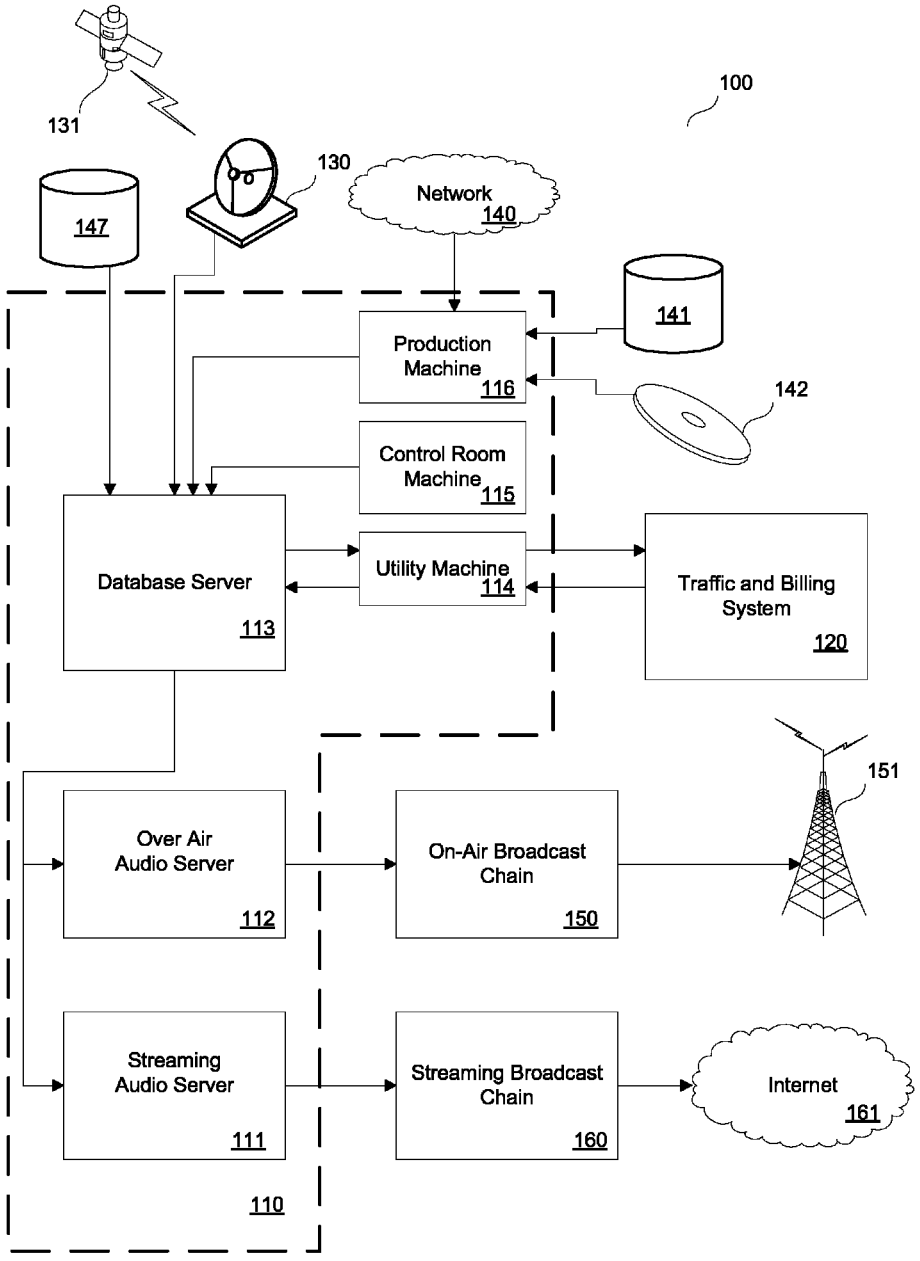

131
100
130
Network
140
147
141
Production
Machine
116
142
Control Room
Machine
115
Database Server
113
Utility Machine
114
Traffic and Billing
System
120
151
Over Air
Audio Server
112
On-Air Broadcast
Chain
150
Streaming
Audio Server
111
Streaming Broadcast
Chain
160
Internet
161
110

FIG. 1

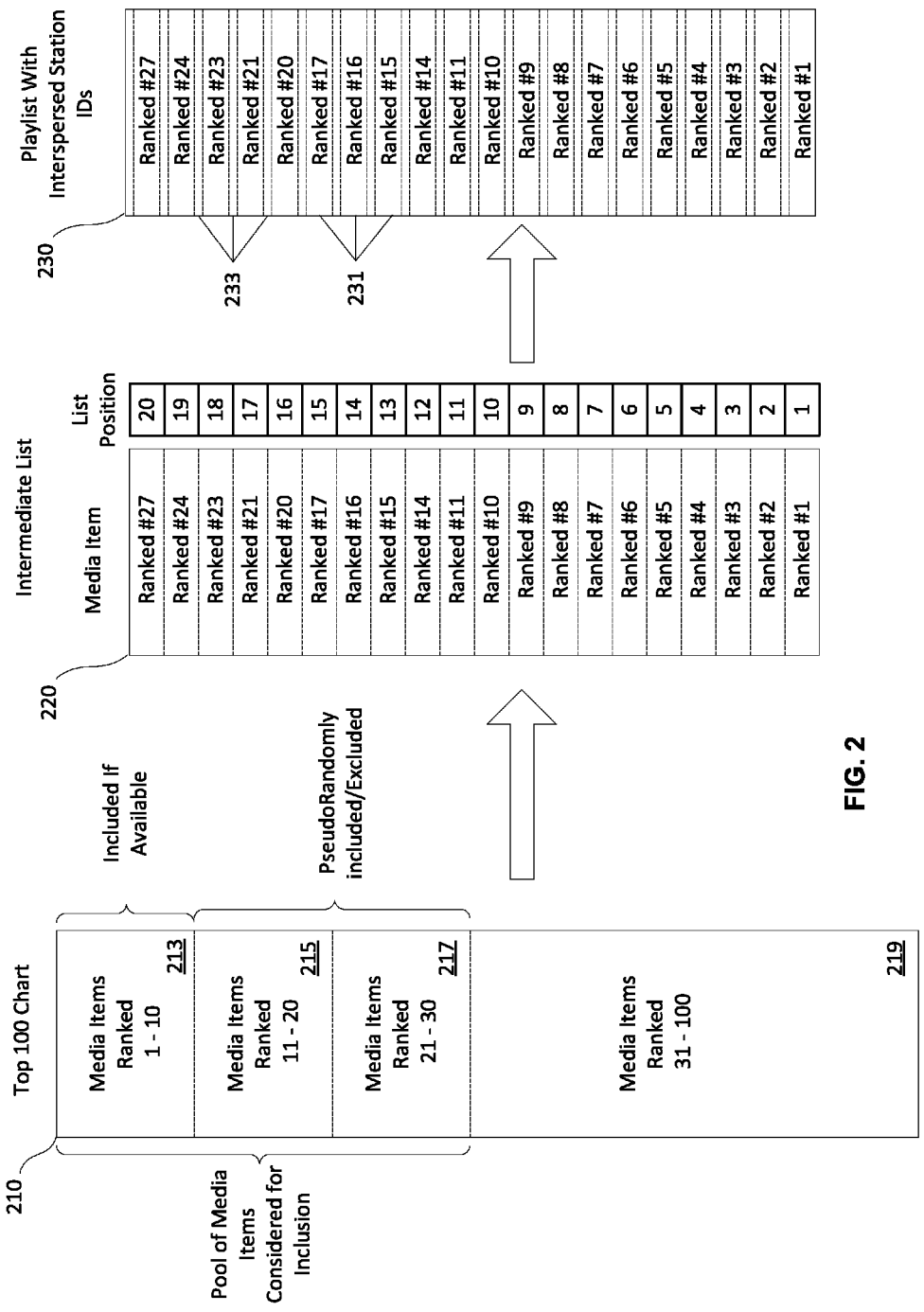

210
Top 100 Chart
Media Items Ranked 1 - 10
213
Media Items Ranked 11 - 20
215
Media Items Ranked 21 - 30
217
Media Items Ranked 31 - 100
219
Pool of Media Items Considered for Inclusion
Included If Available
PseudoRandomly included/Excluded
220
Intermediate List
Media Item
List Position
Ranked #27 20
Ranked #24 19
Ranked #23 18
Ranked #21 17
Ranked #20 16
Ranked #17 15
Ranked #16 14
Ranked #15 13
Ranked #14 12
Ranked #11 11
Ranked #10 10
Ranked #9 9
Ranked #8 8
Ranked #7 7
Ranked #6 6
Ranked #5 5
Ranked #4 4
Ranked #3 3
Ranked #2 2
Ranked #1 1
230
Playlist With Interspersed Station IDs
Ranked #27
Ranked #24
Ranked #23
Ranked #21
Ranked #20
Ranked #17
Ranked #16
Ranked #15
Ranked #14
Ranked #11
Ranked #10
Ranked #9
Ranked #8
Ranked #7
Ranked #6
Ranked #5
Ranked #4
Ranked #3
Ranked #2
Ranked #1
233
231

FIG. 2

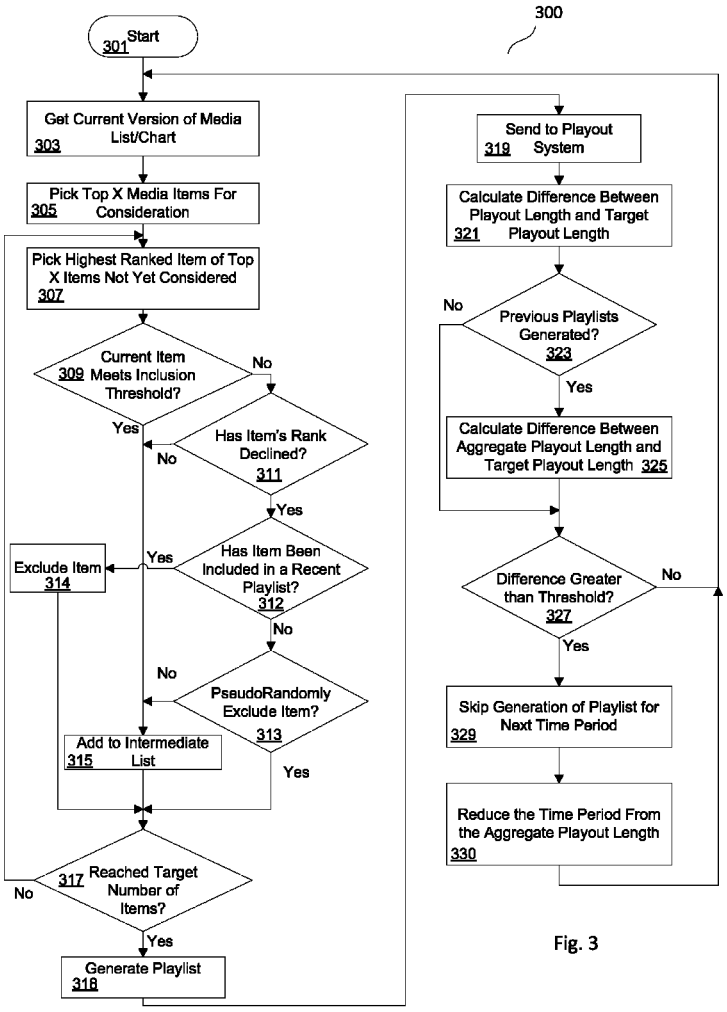

300
Start
301
Get Current Version of Media List/Chart
303
Pick Top X Media Items For Consideration
305
Pick Highest Ranked Item of Top X Items Not Yet Considered
307
Current Item 309 Meets Inclusion Threshold?
No
Yes
Has Item's Rank Declined?
311
No
Yes
Has Item Been Included in a Recent Playlist?
312
Yes
Exclude Item
314
No
PseudoRandomly Exclude Item?
313
No
Add to Intermediate 315 List
Yes
317 Reached Target Number of Items?
No
Yes
Generate Playlist
318
Send to Playout 319 System
Calculate Difference Between Playout Length and Target 321 Playout Length
No
Previous Playlists Generated?
323
Yes
Calculate Difference Between Aggregate Playout Length and Target Playout Length 325
Difference Greater than Threshold?
327
No
Yes
Skip Generation of Playlist for Next Time Period
329
Reduce the Time Period From the Aggregate Playout Length
330

Fig. 3

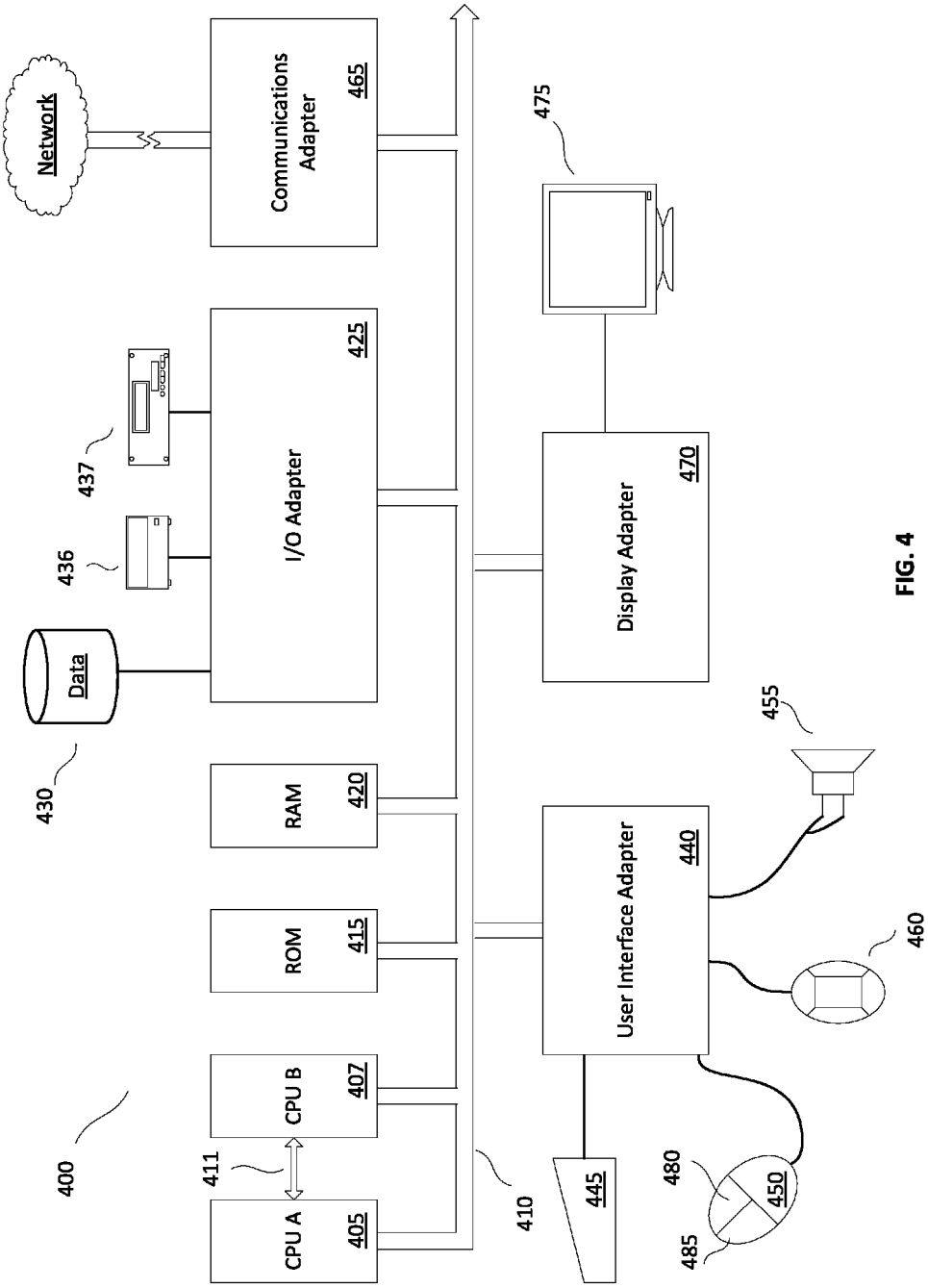

Network
Communications Adapter
465
475
425
I/O Adapter
437
436
Data
430
Display Adapter
470
455
RAM
420
ROM
415
CPU B
407
CPU A
405
400
411
410
User Interface Adapter
440
460
445
480
450
485

FIG. 4

RULES BASED PLAYLIST GENERATION

RELATED APPLICATIONS

This application claims priority pursuant to 35 U.S.C. §121, as a divisional of U.S. utility application Ser. No. 12/917,596, filed Nov. 2, 2010, and entitled "RULES BASED PLAYLIST GENERATION," which is hereby incorporated herein by reference in its entirety and made part of the present U.S. Utility Patent Application for all purposes.

FIELD

The present disclosure relates generally to generating media playlists, and more particularly to rules based playlist generation.

BACKGROUND

Charts listing the top performing media titles are widely used. For example, the popularity of songs played on the radio is measured by companies using various statistical techniques, and the results are compiled into list of the Top 10 songs, Top 20 songs, etc. Similar lists are often compiled for multiple different genres, so that a list of the top 40 favorite songs in all of the United States is available, as well as a top 40 list of country and western songs, top 40 rap songs, and the like. These lists are usually generated based on "spins," so that songs receiving the most airplay are included in the list with a song having the most "spins" being listed as number 1, a song having the second most "spins" being listed as number 2, and so on.

Lists of top performing media songs are often sold, or otherwise made available, to aid radio stations in determining which songs to broadcast. But radio stations generally do not desire to simply play the top 10 songs, top 20 songs, top 40 songs, or the like in strict rotation. Consequently, the lists of top performing songs do not fully inform radio stations which songs should be played; such lists are, therefore, less than perfect.

SUMMARY

Various embodiments of the present disclosure can be realized as a method for use in a server. According to some embodiments, the method includes obtaining a first version of a media list, the first version of the media list indicating a relative performance level of media items in the first version of the media list. First media items are added from the first version of the media list to an intermediate list, with each of the first media items having a relative performance level satisfying a threshold performance requirement. Second media items are selectively added from the first version of the media list to the intermediate list until a combined number of first and second media items added to the intermediate list reaches a target number. Each of the selectively added second media items has a relative performance level inferior to the relative performance level of the first media items. In response to the combined number of first and second media items reaching the target number, identifiers associated with the first and second media items can be added, and a first playlist generated based on the intermediate list.

In some embodiments, generating the first playlist includes interspersing station identifiers between first media items and second media items included in the first playlist, and inverting the first playlist to generate an inverted list. Each of the station identifiers can include an announcement media item indicating a relative ranking of a particular media item in the inverted playlist.

In various embodiments, selectively adding includes pseudo-randomly excluding from the intermediate list at least one media item in the first version of the media list. Further embodiments also include determining whether a current ranking of a media item is different from a previous ranking of the media item, and pseudo-randomly excluding the media item in response to determining that the current ranking of the at least one media item has declined.

Furthermore, a second playlist can be generated. The second playlist includes third media items selected from a second version of the media list, the third media items having a relative performance level satisfying a threshold performance requirement, and fourth media items pseudo-randomly added from the second version of the media list. A first difference between a playout length of the first playlist and a target playout length, and a second difference between a playout length of the second playlist and the target playout length, can both be calculated. The first difference can be added to the second difference to generate a combined playout length difference, and a determination about whether to generate a third list can be based on a comparison of the target playout length and the combined, or aggregate, playout length difference.

Various embodiments can also be implemented as a method that includes generating a first playlist including first media items selected from a first version of a media ratings chart, the first media items including available media items rated highest in the first version of the media ratings chart; and second media items selected from the first version of the media ratings chart, the second media items including available media items rated below a lowest ranked first media item, wherein the second media items are selected by pseudo-randomly excluding at least one media item that would have otherwise been selected as a second media item. Some such methods also include generating a second playlist including third media items selected from a second version of the media ratings chart, the third media items including available media items rated highest in the second version of the media ratings chart; and fourth media items selected from the second version of the media ratings chart, the fourth media items including available media items rated below a lowest ranked third media item, wherein the fourth media items are selected by pseudo-randomly excluding at least one media item that would have otherwise been selected as a fourth media item.

In various embodiments, generating the first playlist and the second playlist includes generating an inverted list with station identifiers including announcement media items indicating relative rankings within the inverted list. The method can also include determining that a potential fourth media item, included in the second version of the media ratings chart, was also included in the first version of the media ratings chart, and determining whether a ranking of the potential fourth media item has declined from its ranking in the first version of the media ratings chart. If its ranking has declined, the potential fourth media item can be pseudo-randomly excluded from the second playlist, whereas if its ranking has not declined, the item is included in the second playlist.

The first version of the media ratings chart and the second version of the media ratings chart can include at least a top 20 ranked media items, and in some embodiments, all available top 10 ranked media items are selected as first media items; and second media items are selected from media items rated top 11 and lower. The second version of the media ratings chart can be an updated version of the first version of the

media ratings chart that reflects changes in the popularity of media items. Some embodiments also include sending the first playlist to a playout system to be played during a first programming period, and sending the second playlist to a playout system to be played during a programming period immediately subsequent to the first programming period.

Various embodiments can also be implemented as a system that includes a processor, memory operably coupled to the processor, and a program of instructions to be stored in the memory and executed by the processor. The program of instructions includes one or more instructions that configure the processor to implement any of various methods disclosed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

Aspects of this disclosure will become apparent upon reading the following detailed description and upon reference to the accompanying drawings, in which like references may indicate similar elements:

FIG. **1** is a block diagram illustrating a system according to various embodiments of the present disclosure;

FIG. **2** depicts stages of playlist generation according to various embodiments of the present disclosure;

FIG. **3** is a flow chart illustrating a method according to various embodiments of the present disclosure; and

FIG. **4** is a high level block diagram of a processing system according to an embodiment of the present disclosure.

DETAILED DESCRIPTION

The following is a detailed description of embodiments of the disclosure depicted in the accompanying drawings. The embodiments are in such detail as to clearly communicate the disclosure. However, the amount of detail offered is not intended to limit the anticipated variations of embodiments; on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the present disclosure as defined by the appended claims.

The following is a detailed description of embodiments of the disclosure depicted in the accompanying drawings. The embodiments are presented in sufficient detail to clearly communicate the disclosure to one of ordinary skill in the art. However, the amount of detail offered is not intended to limit the anticipated variations of embodiments; on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the present disclosure as defined by the appended claims.

Referring first to FIG. **1**, a system **100** according to various embodiments of the present disclosure will be discussed. System **100** includes media automation system **110**, which can be used to control and automate various media broadcast functions, including the generation of playlists; and traffic and billing system **120**, which is used to provide control for various traffic and billing functions such as entering and editing orders, and scheduling spots. System **100** also includes streaming broadcast chain **160**, through which a streaming broadcast of media content can be provided to a network such as Internet **161**, on air broadcast chain **150**, through which media content can be broadcast via a broadcast tower **151**, and various media sources such as an individual source media **142**, bulk media storage **141**, programming from another market received via network **140**, and programming broadcast via satellite **131**, which can be received via satellite receiver **130**. In various embodiments, system **100** also includes database **147**, which can be used to store one or more versions of various media rating charts and lists used in generating playlists according to some embodiments.

Media automation system **110** includes production machine **116**, which receives media content from network **140**, bulk storage **141**, individual source media **142**, control room machine **115**, and utility machine **114**, each of which is connected to database server **113**. Media automation system **110** also includes media playout systems, including Over-Air audio server **112** to provide media content to on air broadcast chain **150**, and streaming audio server **111** to provide audio content to streaming broadcast chain **160**. Playlists generated by Database server **113**, Production Machine **116**, Control Room Machine **115**, or Utility Machine **114** can be provided by Database server **113** to one or more playout systems including either or both of over-air audio server **112** and streaming audio server **111**. In at least one embodiment, one or more of the illustrated servers can be implemented as a virtual server on the same hardware as another of the illustrated servers. Furthermore, various distributed processing techniques can be used to spread functionality of one or more of the illustrated servers across multiple different hardware components.

Media automation system **110** can obtain media charts or lists from any of various internal or external sources. One or more media charts or lists can be purchased or otherwise obtained from third parties via network **140**, or generated by media automation system itself based on data collected from multiple sources. For example, one Top 20 Rock list can be purchased from one provider, and another Top 20 Rock list can be generated by an operator of Media automation system **110**. One or more of these different lists can be aggregated to generate the chart or list used as a starting point for various embodiments disclosed herein. In many cases, however, a single list or chart from a single source, for example Mediabase, is used as the starting list or chart.

Regardless of where the original list is obtained from, in most cases such lists are updated at least weekly, often daily, and in some case more often. Multiple versions of a list can be obtained and stored into database **147** as they become available. Storing multiple versions of the same list can facilitate comparison of media rankings between the two lists. For example, suppose that a media item A is ranked number 15 in a first version of a ratings chart or list, and ranked number 12 in a subsequent version. This change in ranking can be taken into account in generating a playlist, because if a media item becomes more popular, it is more likely to be desirable to include that media item in a playlist. Conversely, it may be less desirable to include a song that is becoming less popular in a playlist. In any case, both multiple different charts (e.g. Country, Rock, Rap, Top 10 from vendor A, Top 10 from vendor B, Top 30, Top 40, Top 100), and multiple different versions of the same chart (e.g. Top 30 Pop available at 3:00 pm from vendor A and Top 30 Pop available at 5:00 pm from vendor A), can be used to generate playlists in some embodiments. According to various embodiments, playlists can be generated from different versions of a media chart, and then delivered to over-air audio server **112**, streaming audio server **111**, or another suitable playout system.

Referring next to FIG. **2**, generation of a playlist based on a ratings chart or list will be discussed in accordance with various embodiments of the present disclosure. Any suitable rating chart or list can be used as the seed from which a playlist can be generated, but in at least one embodiment, a chart listing a greater number of media items than will be included in the final playlist is used. Top 100 Chart **210** is illustrated, but a Top 40 chart may be more commonly available and useful in some instances, particularly where the

pseudorandom exclusion of songs is performed using an algorithm that makes it unlikely for songs ranked below 40^{th} to be reached.

In the illustrated example, the pool of media items considered for inclusion is taken to be the top 30 songs from the Top 100 Chart. The top 30 songs are chosen in this example because in the illustrated example 20 songs can be selected without exhausting a pool consisting of 30 songs. In the illustrated example, the top 10 songs are automatically chosen for inclusion in an Intermediate List **220**, which will eventually become the playlist, if those top 10 songs are available from any of the sources accessible by Database Server **113** (FIG. **1**).

The intermediate list is built by first adding the song ranked #1, if available, to List Position 1 of Intermediate List **220**, and so on until the top 10 ranked songs have been placed in reverse ranked order. Next, each of the songs ranked 11-30 will be considered, in order, for inclusion in Intermediate List **220**, until 20 songs total are included in Intermediate List **220**. Before a song ranked 11-30 by Top 100 Chart **210** is included in Intermediate List **220**, the song is checked for availability. If available, a check is done to determine if the song in question has declined in popularity or some other performance factor. This check is generally performed by comparing a song's rank in a current version of the Top 100 Chart **210** to a previous version of Top 100 Chart **210**. If a song is available, and has not declined in popularity, it is added to Intermediate List **220**.

If, however, the song being evaluated has declined in ranking, e.g. it is currently ranked 11^{th} and was formerly ranked 10^{th}, then the song is pseudo-randomly excluded from Intermediate List **220**. This pseudorandom exclusion can be performed, for example, by generating a pseudorandom number, and based on the number generated, the song can be excluded. Generating pseudorandom numbers is well within the capabilities of one of ordinary skill in the art. That being said, the pseudorandom number can be skewed so that the result is not a pure 50/50 chance of exclusion. In some such embodiments, the pseudorandom number can be skewed based on a current ranking of the song, based on a historical performance of the song over a period of days, weeks, or years, or even based on a number of playlists the song has been included in over the past day, week, or month. Skewing the pseudorandom number can make it more or less likely that any one particular song will be excluded from (or conversely added to) Intermediate List **220**. As used herein, a process to determine whether a song is excluded should also be considered a process to determine inclusion, and determining that a song is not excluded also refers to determining that the same song is included.

Once Intermediate List **220** includes 20 songs, or another target number of songs is selected for inclusion, Playlist **230** can be generated. As illustrated, Playlist **230** is a version of Intermediate Playlist **220** with station identifiers **233** interspersed between the songs **231**. Note that although Intermediate List **220** is shown as being constructed in a First-In-First-Out (FIFO) type of queue, in other embodiments a First-In-Last-Out (FILO) type of list can be used instead. In some such embodiments, Playlist **230** would be an inverted version of Intermediate List **220**. In some embodiments, each of the station identifiers includes a media item such as an announcement of a song's ranking. So, for example, a station identifier associated with the song ranked number 23 may be a voice announcement stating that next song is currently ranked number 23 in the TOP 100 Chart.

In other embodiments, the station identifier can indicate the ranking of the song within the final playlist. For example, the song ranked #27 in the Top 100 is ranked number 20 in the Playlist **230**. Furthermore, the station identifier can include information in addition to, or in place of, ranking information. For example, station identifiers **233** can include a song title, or other information listeners might find interesting or informative. Furthermore, depending on data requirements of a playout system, station identifiers **233** can include tags, links, pointers, or the like that indicate where information to be inserted within the playlist can be found.

Referring next to FIG. **3**, a method **300** according to various embodiments of the present disclosure will be discussed. Method **300** begins at block **301**. At block **303**, method **300** obtains a current version of a media list or chart. In at least one embodiment, the media list or chart obtained at block **303** includes a list of media items ranked according to any of various performance factors. Commonly, media lists or charts are ranked according to popularity, as measured by a number of "spins" or times a particular media item has been broadcast, viewed, or otherwise accessed. As illustrated by block **305**, once a current media list or chart has been obtained, a desired number of top media items are selected for consideration. For example when constructing a top 20 list, the top 30 or 40 media items may be selected for consideration for possible inclusion in the final playlist. Likewise, if a top 10 list is to be constructed, the top 15 or 20 media items might be considered. Furthermore, depending on the pseudorandom exclusion process, a greater or lesser number of media items may be chosen as desired, or consistent with having a sufficient number of media items to prevent exhausting the universe of available media items prior to having selected a target number of media items.

As illustrated by block **307**, the next media item to be considered is selected. Consistent with various embodiments discussed herein, media items are considered from highest ranked the lowest ranked, so the highest ranked media item from the universe of media items selected at block **305** which has not yet been considered, is chosen for evaluation. As illustrated by block **309**, the media item selected for consideration at block **307** is tested to see if it meets inclusion threshold criteria. In at least some embodiments, the inclusion threshold criterion is based on the current ranking of the media item under consideration. For example, in some embodiments, the top 5 ranked available media items may be automatically selected for inclusion in the playlist. Note that various embodiments may include different inclusion threshold. Thus, for example, embodiments choosing the top 7 ranked media items, the top 10 ranked media items, or even only the top ranked media item for automatic inclusion in an intermediate list still fall within the spirit and scope of the present disclosure. If the media item under consideration meets the inclusion threshold, no further testing is required, and the item is added to the intermediate list, as illustrated by block **315**.

Note, although not specifically illustrated herein, if an item under consideration meets the inclusion threshold but is not available, various embodiments of the present disclosure may take steps to obtain the otherwise unavailable media item. This could be done, for example, by attempting to access additional databases, sending a request to a media item provider, or taking other similar steps. If the media item is not available, in some embodiments it will not be added to the intermediate list regardless of its ranking.

As illustrated by block **311**, if a media item under consideration does not meet the inclusion threshold, a check is performed to see if the item's ranking has declined. In some embodiments, the check to determine whether an items ranking has declined includes comparing the ranking of the item in a current version of the media list or chart and at the same

media items ranking in a previous version of the same list or chart. If the items ranking has not declined, in other words if it has remained the same or improved, that media item is added to the intermediate list as illustrated by block **315**.

If, however, the item's ranking has declined, a check is made to determine whether the item has been included in a recent playlist, as illustrated by block **312**. In one embodiment, this may involve checking to determine whether the item has been played in the previous hour. If the item is found to have been included in a recent playlist, then the item is excluded, as illustrated by block **314**. Otherwise, a check is made to determine whether to pseudo-randomly exclude the media item, as illustrated by block **313**. As used herein, pseudorandom exclusion is inversely equivalent to pseudorandom inclusion. That is to say, an item that has not been pseudo-randomly excluded can also be said to have been pseudo-randomly included. If the item under consideration is not to be pseudo-randomly excluded, the item is added to the intermediate list as illustrated by block **315**. Otherwise, if the item is to be pseudo-randomly excluded, the method proceeds to block **317**, or a check is made to determine whether the target number of items has been reached. According to some embodiments, the target number of items refers to the number of media items to be selected from the universe of potential media items selected in block **305** for inclusion in a final playlist. As illustrated by block **317**, if the target number of media items has not been reached the method returns the block **307**, or the next highest ranked item not yet considered is chosen or consideration.

If the target number of items has been reached, for example if 20 media items are to be included in a final playlist, and there are 20 items currently added to the intermediate list, the method proceeds to block **318** were playlist is generated. Generating a playlist can include inverting the intermediate playlist and interspersing station identifiers between the media items included in the intermediate playlist. The station identifiers can themselves be media items of the same type as the media items included in the intermediate playlist. In some embodiments the interspersed station identifiers can include an indication of the ranking of a media item with which a particular station identifier is associated. Note that in some embodiments the intermediate playlist need not be inverted.

As illustrated by block **319**, the playlist generated at block **318** can be sent to a playout system for broadcast, streaming, or other types of playout. As illustrated by block **321**, in conjunction with sending the playlist to play out system, a difference between the actual play out length of the playlist and a target play out length can be calculated. This calculation can be done prior to sending the playlist for play out, at the same time as sending the playlist for play out, or after sending the playlist, as specifically shown in method **300**. In some embodiments, the target play out length can be an hour, a half-hour, 15 minutes, or some other daypart for which a playlist is desired. For purposes of illustration only, a one-hour target play out length will be used. Thus, if a playlist including 20 media items is targeted to be one hour-long, but is instead one hour and 30 minutes long, the difference between the play out length and target play out length will be 30 minutes.

As illustrated by block **323**, a check is made to see if previous playlists have been generated from the current version of the media list or from one or more previous versions of the media list. If other playlists have been generated, as illustrated by block **325** the difference between the play out length of those previous lists and the target play out length is calculated and that difference is added to the difference between the play out length of the current playlist and the target play out length. Continuing with the previous example, and assuming for purposes of this example that the target play out length is 1 hour. Recall that the current playlist generated a difference of +30 minutes. Assume that one previous playlist has been generated, resulting in a difference calculation of −5 minutes. When the two differences in playout length are combined, as illustrated by block **325**, the resulting difference is 25 minutes.

This difference of 25 minutes is compared against a threshold difference as illustrated by block **327**. If 25 minutes is not greater than a difference threshold, method **300** returns to block **303** were a current version of the media list or chart is obtained to begin generation of another playlist. If, however, 25 minutes exceeds the difference threshold, method **300** proceeds to block **329**. As illustrated by block **329**, generation of a playlist for a subsequent time period can be skipped, followed by reducing the time period from the aggregate playout length as illustrated by block **330**, before returning to block **303**.

Continuing with the previous example where a previous playlist has been generated and the target playout length is 1 hour. Assume that the previous playlist (with a playout difference of −5 minutes) was sent to a playout system for broadcast between 1 p.m. and 2 p.m. Once commercial spots and other content are added to the playlist by the playout system, the first playlist will not be completed until approximately 2:15 p.m. The second playlist (with playout length difference of +30 minutes) was intended for broadcast between 2 p.m. and 3 p.m., but the playlist is one hour and 30 minutes long, so with commercial spots and other content, it is likely to require almost 2 hours run. Thus, although the second playlist is intended to play from 2 p.m. to 3 p.m., it is likely instead to be played out between 2:15 p.m. and almost 4:15 p.m. Consequently, no playlist needs to be generated for the 3 p.m. to 4 p.m. time period, because that time period is already taken up by the second playlist. Thus, as illustrated by block **329** generation of a playlist intended to be played out between 3 p.m. and 4 p.m. can be skipped.

Referring now to FIG. **4**, a high-level block diagram of a processing system is illustrated and discussed. Processing system **400** includes one or more central processing units, such as CPU A **405** and CPU B **407**, which may be conventional microprocessors interconnected with various other units via at least one system bus **410**. CPU A **405** and CPU B **407** may be separate cores of an individual, multi-core processor, or individual processors connected via a specialized bus **411**. In some embodiments, CPU A **405** or CPU B **407** may be a specialized processor, such as a graphics processor, other co-processor, or the like.

Processing system **400** includes random access memory (RAM) **420**; read-only memory (ROM) **415**, wherein the ROM **415** could also be erasable programmable read-only memory (EPROM) or electrically erasable programmable read-only memory (EEPROM); and input/output (I/O) adapter **425**, for connecting peripheral devices such as disk units **430**, optical drive **436**, or tape drive **437** to system bus **410**; a user interface adapter **440** for connecting keyboard **445**, mouse **450**, speaker **455**, microphone **460**, or other user interface devices to system bus **410**; communications adapter **465** for connecting processing system **400** to an information network such as the Internet or any of various local area networks, wide area networks, telephone networks, or the like; and display adapter **470** for connecting system bus **410** to a display device such as monitor **475**. Mouse **450** has a series of buttons **480**, **485** and may be used to control a cursor shown on monitor **475**.

It will be understood that processing system **400** may include other suitable data processing systems without departing from the scope of the present disclosure. For example, processing system **400** may include bulk storage and cache memories, which provide temporary storage of at least some program code in order to reduce the number of times code must be retrieved from bulk storage during execution.

Various disclosed embodiments can be implemented in hardware, software, or a combination containing both hardware and software elements. In one or more embodiments, the invention is implemented in software, which includes but is not limited to firmware, resident software, microcode, etc. Some embodiments may be realized as a computer program product, and may be implemented as a computer-usable or computer-readable medium embodying program code for use by, or in connection with, a computer, a processor, or other suitable instruction execution system.

For the purposes of this description, a computer-usable or computer readable medium can be any apparatus that can contain, store, communicate, or transport the program for use by or in connection with an instruction execution system, apparatus, or device. By way of example, and not limitation, computer readable media may comprise any of various types of computer storage media, including volatile and non-volatile, removable and non-removable media implemented in any suitable method or technology for storage of information such as computer readable instructions, data structures, program modules, or other data. Computer storage media include, but are not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information and which can be accessed by a computer.

Various embodiments have been described for generating a playlist based on a media ranking list. Other variations and modifications of the embodiments disclosed may be made based on the description provided, without departing from the scope of the invention as set forth in the following claims.

What is claimed is:

1. A method comprising

generating a first playlist including:

first media items selected from a first version of a media ratings chart, the first media items including available media items rated highest in the first version of the media ratings chart;

second media items selected from the first version of the media ratings chart, the second media items including available media items rated below a lowest ranked first media item, wherein the second media items are selected by pseudo-randomly excluding at least one media item that would have otherwise been selected as a second media item;

determining a first difference between a playout length of the first playlist and a target playout length;

generating a second playlist including:

third media items selected from a second version of the media ratings chart, the third media items including available media items rated highest in the second version of the media ratings chart;

fourth media items selected from the second version of the media ratings chart, the fourth media items including available media items rated below a lowest ranked third media item, wherein the fourth media items are selected by pseudo-randomly excluding at least one media item that would have otherwise been selected as a fourth media item;

determining a second difference between a playout length of the second playlist and the target playout length;

adding the first difference to the second difference to generate a combined playout length difference; and

determining if a third list is to be generated based on a comparison of the combined playout length difference to the target playout length.

2. The method of claim **1**, wherein generating the first playlist and the second playlist further comprise:

interspersing station identifiers between media items, wherein the station identifiers comprise announcement media items indicating relative rankings within an inverted list.

3. The method of claim **2**, wherein:

generating the first playlist and the second playlist further comprise:

generating the inverted list, wherein the station identifiers comprise announcement media items indicating relative rankings within the inverted list.

4. The method of claim **1**, further comprising:

determining that a potential fourth media item included in the second version of the media ratings chart was a media item included in the first version of the media ratings chart;

determining whether a ranking of the potential fourth media item has declined from a ranking of the potential fourth media item in the first version of the media ratings chart; and

pseudo-randomly excluding the potential fourth media item from the second playlist in response to determining that the ranking of the potential fourth media item has declined.

5. The method of claim **4**, further comprising:

including the potential fourth media item in the second playlist in response to determining that the ranking of the potential fourth media item has not declined.

6. The method of claim **1**, further comprising:

determining that a potential fourth media item included in the second version of the media ratings chart was a media item included in the first version of the media ratings chart;

determining whether a current ranking of the potential fourth media item has declined from a ranking of the potential fourth media item in the first version of the media ratings chart;

determining whether the potential fourth media item has been included in a previous playlist within a set time period;

excluding the potential fourth media item from the second playlist in response to determining that the current ranking of the potential fourth media item has declined and that the potential fourth media item has been included in a previous playlist within a set time period; and

pseudo-randomly excluding the potential fourth media item from the second playlist in response to determining that the current ranking of the potential fourth media item has declined and that the potential fourth media item has not been included in a previous playlist within a set time period.

7. The method of claim **1**, wherein the first version of the media ratings chart and the second version of the media ratings chart include at least top 20 ranked media items, the method further comprising:

selecting all available top 10 ranked media items as first media items; and

selecting second media items from media items rated top 11 and lower.

8. The method of claim **1**, wherein the second version of the media ratings chart is an updated version of the first version of the media ratings chart that reflects changes in popularity of media items.

9. The method of claim **1**, further comprising:

sending the first playlist to a playout system to be played during a first programming period; and

sending the second playlist to a playout system to be played during a programming period immediately subsequent to the first programming period.

10. A system comprising:

a processor;

memory operably coupled to the processor;

a program of instructions to be stored in the memory and executed by the processor, the program of instructions including:

at least one instruction to determine a first difference between a playout length of a first playlist and a target playout length;

at least one instruction to determine a second difference between a playout length of a second playlist and the target playout length;

at least one instruction to add the first difference to the second difference to generate a combined playout length difference; and

at least one instruction to determine if a third list is to be generated based on a comparison of the combined playout length difference to the target playout length.

11. The system of claim **10**, wherein:

the first playlist includes a plurality of highest ranked media items selected from a first version of a media ratings chart; and

the second playlist includes a plurality of highest ranked media items selected from a second version of the media ratings chart.

12. The system of claim **11**, further comprising

at least one instruction to determine whether media items included in the second playlist are duplicate media items, wherein a duplicate media item is included in both the first playlist and the second playlist; and

at least one instruction to pseudo-randomly exclude at least one duplicate media item from the second playlist.

13. The system of claim **11**, further comprising:

at least one instruction to preliminarily select, for inclusion in the first playlist, a plurality of lower ranked media items from the first version of the media ratings chart; and

at least one instruction to pseudo-randomly exclude at least one of the plurality of lower ranked media items that were preliminarily selected.

14. The system of claim **13**, wherein the first version of the media ratings chart and the second version of the media ratings chart include at least top 20 ranked media items, the system further comprising:

at least on instruction to select all available top 10 ranked media items from a top 20 ratings chart as highest ranked media items for inclusion in the first playlist; and

at least one instruction to select the lower ranked media items from among media items ranked top 11 and lower.

15. The system of claim **13**, further comprising:

at least one instruction to determine whether a ranking of a preliminarily selected media item has declined relative to a previous ranking of the media item; and

wherein the at least one instruction to pseudo-randomly exclude is configured to consider the preliminarily selected media item for pseudo-random exclusion in response to determining that the ranking of the preliminarily selected media item has declined.

16. The system of claim **10**, further comprising:

at least one instruction to generate a playlist including announcement media items indicating relative rankings of other media items associated with the announcement media items.

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